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ABSTRACT

This module is one in a series of six designed to help vocational educators develop skills needed to make use of the Vocational Technical Education Consortium of States materials and to develop and manage individualized instructional programs. Recommended for use by both pre- and inservice teachers and curriculum development specialist interns, the modules should help them institutionalize performance-based vocational education. The objective of this module is to help develop skill in functioning in the role of change agent. Focuses are knowledge about performance-based vocational education and about change in education, the Pennsylvania plan for effecting the changes needed to institutionalize performance-based vocational education, and the role of the change agent in the plan. Contents include five learning experiences based on four enabling objectives. A list of outside resources which supplement those contained within the module is presented. Each learning experience contains some or all of the following materials: enabling objective; learning activity (activities), including information sheets, case studies, and self-checks with model answer (as feedback); and optional activity (activities). (YLB)

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ASSIST VOCATIONAL PERSONNEL MOVE TOWARD FULL ADOPTION OF PERFORMANCE BASED VOCATIONAL EDUCATION (PBVE)

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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INTRODUCTION

There are many good reasons for all educators to accept the concept of performance-based education and to take steps to fully institutionalize it. However, educators have traditionally been slow to make any changes in their operating practices no matter what the innovation and no matter how much potential the innovation has for improving education.

Pennsylvania has endorsed Performance-Based Vocational education at all levels (Secondary, Postsecondary, and Teacher Education) but vocational educators have been slow to make needed changes so as to comply with the endorsement. Such is to be expected given what is known about change and the process by which change occurs.

The change process has been under investigation in many areas for a number of years and it is becoming increasingly clear that the process can be speeded up through the use of change agents and well designed change strategies. Pennsylvania has developed a strategy to help vocational educators accept the concept of Performance-based education and to move toward fully institutionalizing it. You have been selected as a change agent to assist Pennsylvania vocational educators thereby shortening the time it will take to bring about the change in question.

The purpose of this module is to help you develop the skills you will need to function in the role of change agent. You will learn about performance-based vocational education and about change in education. You will learn about the Pennsylvania plan for effecting the changes needed to institutionalize performance-based vocational education and your part in the plan.

ABOUT THIS MODULE

Objectives:

Terminal Objective: While working with Vocational Education Personnel, assist them to move toward full adoption of Performance-Based Vocational Education. Your performance will be assessed by your Resource Person, using The Change Agent Performance Assessment Form, pp. 70-71 (Learning Experience V).

Enabling Objectives:

1. After completing the required reading, demonstrate knowledge of the rationale for and characteristics of Performance-Based Vocational Education (Learning Experience I).
2. After completing the required reading, demonstrate knowledge of change as such relates to education (Learning Experience II).
3. After completing the required reading, demonstrate knowledge of the Pennsylvania Diffusion Plan (Learning Experience III).
4. Given a case study describing how a hypothetical change agent worked with two schools to move staff toward full adoption of PBVE, critique the performance of the change agent (Learning Experience IV).

Resources:

A list of the outside resources which supplement those contained within the module follows. Check with your Resource Person (1) to determine the availability and location of these resources, (2) to locate additional resources if needed, and (3) to get assistance in setting up activities with peers or observations of skilled change agents, if necessary. Your Resource Person may also be contacted if you have difficulty with directions, or in assessing your progress at any time.

Learning Experience I

Optional

Reference: CBVE Resource Notebook, 1977-1978. Bureau of Vocational Education (Available through VEIN).

Learning Experience II

Optional

Reference: Communication of Innovation: A Cross Cultural Approach By Everett M. Rogers and F. Floyd Shoemaker; 1971

Learning Experience III

Optional

A Resource Person and/or Peer Change Agents

Learning Experience IV

Optional

A Resource Person and/or Experienced Change Agents

Learning Experience V

Required

Vocational educational personnel associated with a Pennsylvania school who might be influenced to move toward adopting PBVE.

A Resource Person to assess your competence to assist vocational education personnel to move toward full adoption of PBVE.

LEARNING EXPERIENCE I

Enabling Objective

After completing the required reading, demonstrate knowledge of the rationale for and characteristics of Performance-Based Vocational Education.

Activity

You will be reading the information sheet, Performance-Based Vocational Education, pp. 6-22.

Optional Activity

You may wish to read all or part of the materials found in the CBVE Resource Notebook, 1977-1978 produced by the Bureau of Vocational Education, Pennsylvania Department of Education as part of a Vocational Administrator Leadership Development program.

Activity

You will be demonstrating knowledge of the rationale for and characteristics of Performance-Based Vocational Education by completing the Self-Check, pp. 23-24.

Feedback

You will be evaluating your competency by comparing your completed Self-Check with the Model Answers, pp. 25-27.

Activity For information concerning the rationale for and characteristics of Performance-Based Vocational Education, read the following.

PERFORMANCE-BASED VOCATIONAL EDUCATION

The needs and interests of vocational students have always varied and, due to "mainstreaming", the differences between and among them are greater now than at any previous time. Despite these differences, vocational education is still responsible to graduate students with the skills, knowledge, and attitudes needed to obtain and hold job-entry positions in the occupations for which they were prepared.

There are some vocational educators who feel that the purpose of vocational education can no longer be met due to the kinds of students finding their way into vocational education. They have given up in their attempts to overcome what they see as an impossible situation. Others feel that vocational education can accomodate all students no matter what their disadvantage or handicap and fulfill its purpose quite well. They see recent changes in students as a challenge to be met.

There is no doubt that vocational education can not accomodate students with wide differences if it operates as it has for so many years. It is impossible to address student differences when a program is of a specific length of time and group instructional techniques prevail. It is inhumane to operate a program that compares the achievement of special students to group norms. It is unethical to graduate students not having the skill, knowledge, and attitudes needed to obtain and hold a job in the occupation for which they were prepared.

There is every reason to believe that student differences can be accomodated in vocational education if educators internalize the concept of Performance-Based Education and take the steps needed to develop performance-based programs.

The Characteristics of a PBVE Program

It is commonly accepted, that all characteristics of a PBVE program exist for the purpose of meeting the needs and interests of each student. As such, the overriding characteristics of a PBVE program is that instruction is individualized. Stated bluntly, if a program is not organized in such a way that each student's needs and interests can be met, the program is not viable and, thus, it should not be considered performance-based.

Given the commitment to serve each student through individualized instruction, each other characteristic of PBTE helps fulfill that commitment. For instance:

1. The program must be focused on the skills needed by students upon entry into occupations. These skills must be identified through a rigorous examination of what incumbent workers do on-the-job; occupational analysis.
2. Instruction is specifically designed to help students develop job entry level skills. "Nice to Know" information, no matter how interesting, is not included in the instructional program.
3. Students are required to demonstrate their proficiency at each skill included in the program through performing the skill (a task) under conditions to be found in the occupation being learned and to the standards that will apply upon entry into the occupation.

4. Both students and teacher know, prior to instruction, what skills are to be learned as well as the conditions and standards associated with appropriate performance.
5. Student achievement is determined by a direct comparison of personal ability against desired ability. Students are not compared to each other when describing student achievement. Skill is the criterion for success and, as such, it remains a constant against which comparisons are made.
6. Progress through the program is measured in terms of skills learned with time allowed to vary as a function of student differences.
7. The program is focused on exit criteria (requirements) and it is understood that students will differ upon entrance but should exit only when minimum criteria are met.
8. The program ideally should provide for students to have open entry into the program (time of entry) and open exit from it (time of exit).
9. Students should be continually informed concerning their progress toward developing each skill the program addresses.
10. Students should be encouraged to accept responsibility for personal progress and allowed to set a learning pace in keeping with personal ability.
11. Instructional material should be highly mediated to overcome student differences and the use of learning guides (modules) helps students make appropriate progress in the program.
12. The program operates as a system with each program component and function identified. The relationships between components and functions are continually examined as such relates to students' progress in the program.

13. All program decisions are made on the basis of data which is routinely collected and analyzed.

In recent years, there has been much attention given to the catalogues produced through the efforts of the V-TECS consortium. In fact, there are some vocational educators who have erroneously concluded that the teacher who has adopted a V-TECS catalog has adopted Performance-Based Vocational Education. Such is not the case since the efforts of V-TECS are directed toward developing valid vocational curricula not an effective system in which the needs and interests of all students can be met. However, without a valid curriculum in place, an educational system can have no purpose. Therefore, the efforts of V-TECS are needed because such reduces the efforts needed by local vocational educators to design an effective Performance-Based Vocational program.

There are several states and numerous educational institutions that have demonstrated, through their actions, a commitment to make PBVE a reality. Unfortunately, few have had very much success in fully implementing the concept. Most often, the efforts result in several of the characteristics of PBVE being included within a program.

One institution that has been very successful in its attempt at developing Performance-Based Vocational Education programs is Minnesota's 916 Area Vocational-Technical Institute. This school, located in White Bear Lake, Minnesota, is open to secondary, postsecondary, and adult students and serves students with a wide variety of needs and interests. For instance, students sponsored by the Division of Rehabilitation, CETA, Veterans Administration, and the Minnesota State Prison system. A close examination of the operation of 916 might help provide criteria against which to assess all other Performance-Based Vocational Education efforts. Following is an article written by Dr. William Knaak, the Chief School Administrator of 916. As you read the article, do not be confused by the word "competency" rather than "performance" when speaking of

PBVE. The two words are used interchangeably by most educators.

The Anatomy of a Competency-Based School

by William C. Knaak

Competency-based education has been described as a movement, as educational reform, as innovation, and as a "new gimmick." William Spady called it "A Bandwagon in Search of a Definition."

Perhaps competency-based education has become what S.I. Hayakawa calls a code-word--a term that engenders emotional connotations, either highly positive or highly negative depending on the predisposition and life experience of the perceiver. During the past five years every state has studied competency-based education. Twenty-three states have produced documents that specifically address either competency-based education or competency-based certification (Pittman, 1975).

Oregon has mandated competency-based education for its elementary and secondary school system, and California has passed a similar law. Currently there is a bill before Congress that would require all states to set minimum competency standards with tests to measure student attainment.

Pincer Movement

Besides the political interventions, various citizen groups have picked up the concept. It is, for example, being advocated by "back to basics" groups as a way to ensure minimum achievement levels for high school graduates. Thus vocational education is caught up in a dual thrust--competency-based education (CBE) as part of the general education system to which it belongs, and competency-based vocational education (CBVE) which has its own momentum.

To complicate matters, CBE and CBVE are inexorably entwined with other recent "code-words" such as performance-based education, mastery learning, personalized instruction, and individualized instruction. In short, no broadly accepted set of definitions for these terms has emerged; it remains for authors to provide their own definition to clarify their own prose.

Ben Hirst in the preceding article treats competency-based vocational education and performance-based vocational education as equal, and goes on to identify ten components of a competency-based system (by whatever name it is called). Dr. Hirst's ten components appear to be basic to any good learning system. While they could be re-grouped, re-sorted, expanded, or contracted by other authors, they are essentially sound as stated, and in my opinion, can serve as an effective base for further discussion of competency-based vocational education.

Setting for CBVE

Our experiences with competency-based instruction at the 916 Area Vo-Tech Institute in Minnesota are so much a part of the development of the school's instructional system that a brief description appears to be in order.

The 916 Area Vo-Tech Institute (referred to as 916 AVTI and sometimes simply 916) opened as a new facility in September 1972 with an open-entry/open-exit, year-round, personalized vocational-technical instruction system. Today it serves 1,100 shared-time seniors from 14 senior high schools, nearly 1,800 full-time post-secondary adults, and an enrollment of 5,500 adults in part-time or extension programs. The full-time postsecondary population includes a number of agency-sponsored enrollments, among which are these:

139 students sponsored by the Division of Rehabilitation;

123 CETA students;

61 students who are clients of the Bureau of Indian Affairs, WIN, SSB, the Veterans Administration (disabled), and Welfare;

47 students enrolled in special evaluation services for handicapped students (plus 107 handicapped students who are not agency-sponsored);

18 students on daytime release from the Minnesota State Prison;

130 inmates enrolled in facilities within the State Prison;

25 students from the Jamestown Residential Facility for Clinically Dependent Youth, and four students from the Ramsey County Workhouse.

Also enrolled at different times on an extended-day basis are twenty to eighty vocational-technical instructors-in-training from Iran and Saudi Arabia.

The 916 Intermediate School District also provides instructional services to 400 trainable mentally retarded students, pre-school through adult.

Continuous Stream

There are no special training programs for handicapped and disadvantaged students; all are integrated directly into the regular occupational program with special support services for those who need help. Special waiting lists are maintained for disadvantaged and handicapped students to make sure that they have access to programs. Thirty percent of graduates in 916 AVTI have received some special assistance, but because of

the personalized self-paced system, many are able to complete the programs without it.

Forty-five percent of the postsecondary population is female, and 55 percent, male. Secondary and postsecondary students are trained in the same facility, with 55 percent of the secondary students directly integrated with the post-secondary students.

The facility operates in a "continuous stream" model, 12 months of the year. The Institute building has 1,400 training stations, used nearly every day by about 3,500 different persons.

The 916 Vo-Tech Institute offers training in 55 occupations for full-day postsecondary students; 46 occupations for secondary students, and many additional mini-courses for adult part-time trainees. Courses are fully articulated between the secondary and postsecondary curriculums. Competencies mastered during secondary-school training need not be repeated if the student continues in the same occupational program after high school graduation. The instructional content of most full-day post-secondary programs is available also to adults who attend classes part-time during the day or evening.

New students are accepted on the first Monday of each month whenever there are vacancies, and graduate when they complete the work required. Learning is self-paced, within reason. "Within reason" means that the student is expected to attend classes regularly and make progress according to his or her learning rate. Students are permitted a one-week vacation each calendar year, at a time of their own choosing.

Grading System

Two grades are given: M or T (Mastery or Test-out). Students who want to pursue their studies in an almost total self-instructional learning style may do so. Standard completion times of the 55 programs range from eight to 24 months. Personal assistance is always available for those who need help, and all students are given instructions on how to learn in a personalized system when they begin coursework.

Student progress is reported via timecards which make up the input system for a computerized student management system. Each month the student receives a print-out report of the tasks mastered or tested out, standard task hours completed, estimated program completion time based on present rate of progress, number of absences and tardies, and a graphic representation of the student's progress measured against an established time standard. Summary reports go to the instructor and to the student administration office. Students progressing at a rate lower than 67 percent on the standard time scale receive counseling assistance.

In summary, this is a vocational-technical learning system totally committed to competency-based, self-paced learning. The question now becomes, how did it get that way? The answer is: for management purposes.

The Board Had Goals

In 1970 when the instructional program was being planned, the new 916 Board had a number of goals. Some of them were derived from a University of Minnesota Bureau of Field Studies Research Report. Others were original with the Board. Essentially, these were the goals:

. There was a strong commitment to secondary as well as post-secondary vocational training. The Board felt that for purposes of efficiency, postsecondary students should not have to repeat skills and knowledge already acquired at the secondary level--or elsewhere.

. The State Board of Education, the State Department of Education, and the 916 Board were concerned about the absence of handicapped and disadvantaged students in vocational training during the 1960s. They wanted assurance that handicapped students would have access to programs without long delays; and that with proper assistance, handicapped students could function in vocational training and complete program segments that would lead to employability.

. The 916 Board was oriented to accountability and efficiency. They wanted year-round use of facilities and as many hours of daily use as the enrollments warranted.

. Open entry was desired. No student should be denied the right to enter and try an occupational training program. This meant that instruction would have to be available 24 hours a day to accommodate part-time students.

It also meant that instructional staff, buildings, and equipment would have to be used more efficiently, and that the placement of graduates would have to be organized so that students could go into the labor market year round.

Benefits Came Later

In 1970 the program planners in District 916 were largely unaware of John B. Carroll's research on variable learning time

and Benjamin Bloom's mastery of learning studies which were beginning to document the potential educational effectiveness of competency-based, personalized, variable-time learning systems. Thus the reason for starting the CBVE learning model was not that it had been proved to be a superior learning system or that anyone especially wanted to be innovative. It was simply that CBVE was the only model available that had the management capability to meet the Board's goals. The traditional group-centered, norm-referenced, instructional system could not be restructured to accomplish the desired results.

In the earlier stages of development, the CBVE system was defended primarily on management grounds; the learning benefits were not all that visible at first. Competency-based vocational education does not in fact become a superior learning system until quality (materials, staff, and facility development) is built into the learning system. Then the educational advantages begin to accrue.

Briefly, these advantages are that the learners progress at their own best rate to a mastery of the instructional content, and more learners achieve mastery than is possible under a group-centered instructional system. Students learn according to their preferred learning style, build up confidence through success in learning, and often speed up their learning. The students learn to help each other rather than compete for grades, and peer assistance is optimized. The instructors perform as managers of learning instead of information dispensers; their efficiency is increased, and consistency in presentation of instructional content is ensured.

Building Up the Curriculum

During the past five years 916 AVTI has built up a competency-based curriculum that now offers 55 training programs. A total of 5,800 job tasks have been defined; 5,800 terminal performance objectives and 23,000 learning objectives have been written; and 5,800 learning guides have been developed, including individualized print and audiovisual learning materials, and performance and knowledge criterion tests.

Newly employed instructors did most of the initial curriculum work in 1972. An effort was made to give instructors two months of lead time to make the needs analysis and develop learning materials. Frankly, this was less than adequate but it was all that the funding allowed at that time.

The instructors were somewhat typical of those starting out in a new vo-tech school. Seventy percent had no formal teaching experience, and less than 50 percent had degrees.

Occupational task lists were drawn from meetings with advisory committees made up of persons working in the occupation or supervising it. This needs-analysis segment of the development covers most of the activity described by Dr. Hirst in Components One to Four.

An institutional model was designed for the development of objectives, learning guides, and learning resources. The model contains procedures for writing terminal performance objectives, converting task details into learning objectives, sequencing objectives, writing and sequencing learning steps, and selecting resources. (Each of these procedures could be the topic of a ma-

jor article; they are dealt with in some detail in the book Individualizing Vocational-Technical Instruction by Pucel and Knaak, pages 89-130.)

Model Saved the Day

In retrospect, having a model was probably crucial to the success of the project because many of the instructors, while not sufficiently grounded in learning theory to organize, write, and sequence learning objectives and resource materials, could follow a model and produce effective materials even without the theory background. We found, however, that when instructors later acquired the learning theory in vocational teacher training, it helped them to improve their materials.

The model used at 916 AVTI supports Dr. Hirst's Component Five (look for existing resources) in that sources of available learning materials are always searched before local resource development is initiated. Over the five-year period, however, 916 AVTI has established a strong instructional services department. Students taking the AV-TV Production Technician course also produce many learning materials.

In addition, the school has been aided in its instructional development efforts by various mutual assistance contracts with Control Data Corporation, 3M Company, the Veterans Administration, State Department of Education, the U.S. Health Services, the Minnesota Department of Corrections, and the Saudi Arabian Government.

Rather than seeking outright grants, the school has sought to align itself with other private and governmental organizations

that have similar needs for personalized learning materials. During the five-year period, more than half a million dollars from external sources have been channeled into instructional development.

Overall operating and capital costs are similar to those of other, more conventional institutions in Minnesota, but because of accelerated completions, the cost per graduate is less. Audio-visual equipment costs are higher--there are more than a thousand individual AV machines in the facility. But other equipment costs such as machine shop costs are decreased because of the system's rotational efficiency.

The closest counterpart in the 916 system to Dr. Hirst's Component Seven (developing lesson plans) is the process of writing personalized learning packages. To designate this process as a single activity, however, understates a task of monumental importance in the competency-based learning system--that of developing and testing criterion-referenced knowledge tests and performance checklists. For new instructors, this is probably the most difficult and demanding task, and the staff continues to give it close attention. At 916 AVTI, the performance levels required are usually keyed to the job-entry performance of trained workers or the "advanced apprentice."

Testing Is Constant

Learning materials are constantly being tested on students and reviewed and updated with the assistance of the instructional development staff. The instructional advisory committees, which now have student representatives as well as industry memberships,

still meet at least four times yearly and regularly review the task listing for validation.

Staff inservice development at 916 AVTI has focused on improving techniques for test and performance checklist writing, selection and development of resources, and improving interpersonal communication with students. The instructional staff is currently experimenting with cognitive mapping for students and computer-assisted instruction for a variety of occupational programs. Both of these processes lend themselves well to competency-based instruction. Improvements in the personalized learning system now tend to be generated from instructors and instructional development personnel.

The Institute has benefited from exchanges with other competency-based vocational institutions; for example, the Central Nebraska Technical College at Hastings; Fox Valley Technical Institute in Appleton, Wisconsin, and the Suburban Hennepin Vocational Centers in Edina, Minnesota.

Help for New Instructors

To help new teachers learn the instructional system, 916 AVTI has developed seven self-instructional modules covering the use of personalized instruction, designing self-paced curriculum for the personalized system, selecting and designing resources, developing evaluation instruments, and revising the curriculum. Two introductory modules are entitled "Working at 916" and "Becoming an Instructor."

The Minnesota Division of Vocational-Technical Education has sponsored a statewide curriculum project since 1973, a major ob-

jective of which is to encourage articulation by providing inservice training in competency-based education to vocational teachers. The project has found that teachers are more likely to use competency-based tasks and objectives if they participate in the development of those tasks and objectives.

This project and other efforts have resulted in competency-based programs and departments in many of the state's 33 area vo-tech institutes and 59 high school vocational centers. Some vocational teachers in comprehensive high schools also have converted to various forms of competency-based instruction.

Another Minnesota-based project, Project HOPE (Helping Others Personalize Education), offers on-site consultation and inservice assistance to teachers who need help in personalizing instruction.

Likely To Be Lasting

Models of competency-based instruction in the state vary from relatively large vo-tech institutes functioning totally within a competency-based system to a business education teacher struggling to write his or her first performance objective. Nearly every variation of CBVE requires processes that are based on employment needs and on the collection and use of performance data from students for the purposes of remediating student learning and improving learning materials and teaching performance. This is just good educational practice. Regardless of disagreement or confusion about terms, it is likely that competency-based instruction will prevail and influence vocational education for many years to come.

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A quick comparison between the previously stated characteristics of Performance Based Vocational Education and what Dr. Knaak has to say about 916 should make it clear that PBTE does make it possible for a school to address student differences very effectively.

Quite a few vocational educators from Pennsylvania have had the opportunity to visit 916 to observe it in operation. In fact, in early May of 1980, a team of seven Pennsylvania educators spent one week at 916 working as interns in various aspects of the program to gain additional insight into its operation. In designing a plan for moving Pennsylvania vocational educators toward adopting PBVE, it is the 916 model that Pennsylvania hopes to adopt.

Optional Activity ⇨ You may wish to arrange through your Resource Person to obtain a copy of the CBVE Resource Notebook in which numerous articles and materials related to Performance-Based Vocational Education are presented.

Activity ⬆ The following items check your comprehension of the material in the information sheet, Performance-Based Vocational Education, pp. 6-22. Each of the three items requires a short essay-type response. Please explain fully but briefly and be sure to respond to each part of an item.

SELF-CHECK

1. You have been invited to Coal County AVTS to speak to its staff concerning Performance-Based Vocational Education. According to the school director, the staff has the notion that having made use of V-TECS catalogs it has already adopted PBVE. In fact, the staff has come to the conclusion that PBVE is not good since, having made use of the catalog, it has not effected any improvement in school programs. What could you say to the school staff that might help it gain a deeper understanding of PBVE?

2. During a meeting with a local parent group in which you are attempting to convince members that moving into PBVE will improve the quality of school programs, a father of a student from the school involved asks the following; "What is being said about PBVE seems to have merit, but what evidence can you present that shows it can work?" How would you respond to this father's question?

3. It is said that the most important characteristic of PBVE is that it focuses on the needs and interests of each student. Why is this an important characteristic? How is it possible to focus on individual students when each teacher has about 15 students to serve at once?

Feedback

Compare your written responses on the Self-Check with the Model Answers given below. Your responses need not exactly duplicate the model responses. However, you should have made the same major points.

MODEL ANSWERS

1. The staff of this school has made an effort to move into PBVE and, as a change agent, you must start by acknowledging the effort already made.

The staff should be informed of the most important characteristic of PBVE, individualization, and how each other characteristic is included to make individualization work. They should be informed that using V-TECS catalogs goes a long way toward assuring that each vocational program focuses on skills that students should learn while in the program; a characteristic of PBVE. They should also be informed that instruction must include only relevant information as such applies to each skill to be learned. They should learn that students must be made aware of program objectives in advance of instruction and that they be informed of the conditions and standards associated with appropriate skill performance.

The staff should understand that an ideal program should be organized on an open entrance-exit basis with students allowed to set a learning pace consistent with their ability. It should understand that student achievement is measured in terms of skills learned and that students must be helped to accept responsibility for personal progress in the program.

The staff should be made aware that teachers must make extensive use of mediated materials to overcome student differences and that programs be systematically developed using a data base for making all program decisions.

2. The father is certainly justified in asking the question. What may appear to have the potential to improve education doesn't assure its improvement.

This father should be informed about the efforts made in several states and institutions to install PBTE, especially that at AVTI-916 in Minnesota. He should be told about the way 916 is organized so that each student may progress at an individual pace until mastery at each particular occupation is reached. Being a taxpayer, he should be told that the school operating budget is actually less than that of comparable but more traditional schools.

So that this father can have more information about 916 he should be referred to the many persons from Pennsylvania that have visited this school to observe first hand its operation. Perhaps, he should be given a copy of the article written by Dr. Knaak, the school's superintendent; "The Anatomy of a Competency-Based School."

3. Given the greatly increased differences between and among vocational students it is absolutely necessary to develop programs that focus on individuals. Students now enter school with serious disadvantages and handicaps which render group instructional techniques virtually ineffective.

Through the judicious use of highly mediated materials and learning guides (modules), each student can be helped to progress through a program at a pace consistent with personal ability and learning style. Granted that each student must accept a greater responsibility for personal progress in a PBVE program. However, such can occur as has been demonstrated at 916.

LEVEL OF PERFORMANCE: Your completed Self-Check should have covered the same major points as the model responses. If you missed some points or have questions about any additional points you made, review the material in the information sheet, Performance-Based Vocational Education, pp. 6-22, or check with your Resource Person if necessary.

LEARNING EXPERIENCE II

Enabling Objective After completing the required reading, demonstrate knowledge of change as such relates to education.

Activity You will be reading the information sheet, Education and Change, pp. 29-40.

Optional Activity You may wish to read all or part of Communication of Innovations by Rogers and Shoemaker.

Activity You will be demonstrating knowledge of change as such relates to education by completing the Self-Check, pp. 41-44.

Feedback You will be evaluating your competency by comparing your completed Self-Check with the Model Answers, pp. 45-48.

Activity For information concerning change as such relates to education, read the following:

EDUCATION AND CHANGE

Although each school determines its instructional content, it is the teacher who actually decides what is to be taught and how it will be done. There are numerous real and perceived factors in a vocational teacher's environment which could influence whether or not he or she will utilize performance-based education. The social structure of schools has an effect on teachers' personality, communication behavior and attitudes. Each teacher's behavior is largely dependent on school norms which could be very traditional or very modern. For the most part, however, schools are traditional having norms that operate against all change.

The decision to become involved in performance-based vocational education could be made at an organizational level, the school, or at an individual level, the teacher. In either case, numerous factors would have influenced that decision as well as the extent to which the decision results in PBVE being utilized within an instructional program.

A person wishing to help others adopt PBVE must understand the adoption process to be effective. Since change is highly dependent on communication, it is best discussed within a communication model. The model herein used is S-M-C-R-E Model which states that a source(S) sends a message(M) via certain communication channels(C) to a receiving individual(R) who responds or reacts to the stimulus with an effect(E).

Source(S)

The origin of information about anything is said to be its source. The source can be personal or impersonal depending on the communication channel used by the receiver. When information comes to a receiver from a source on a face-to-face basis, the source is considered personal. In such a situation, both the receiver and the source can interact. Either can engage or disengage in communication at will with information being adjusted to meet personal needs.

Research shows that a personal source of information about PBVE will be most helpful to teachers when they have made the decision to utilize it. However, research also shows that an impersonal source of information is most effective in making them aware of the concept. Stated differently, teachers should be introduced to the concept of PBVE via mass communication channels using a source of high credibility. Then, once they show a desire to utilize the concept, they should be provided very personalized information via a resource person who can determine their needs and offer sufficient help.

Message(M)

The information coming from a source is considered to be the message. A message can be brief or long, complete or incomplete, accurate or inaccurate, biased or unbiased; such will depend on the motives and expertise of the source. The message about PBVE would probably describe one or more of its characteristics which would be interpreted by each receiver based on past experiences, present attitudes, and the immediate situation. This being the case, what a receiver hears might be very different than what the source stated.

Research has shown that a teacher's perception of certain characteristics of any new educational practice has a great deal to do with whether or not he or she will adopt it. It has become clear that it is not the relative merits

of new practices that determines if teachers use them but, rather, what teachers perceive to be the merits of the practices.

Relative advantages - Teachers will not utilize PBVE unless they feel that in doing so they derive advantages in the areas of economics, prestige, convenience, and/or satisfaction. It is unlikely that local teachers will benefit in terms of economics but becoming an adopter of PBVE could add to their prestige within the local faculty, make them better able to meet the needs of all students (convenience), thus, increase their job satisfaction. It is important that teachers be made aware of the relative advantages of PBVE to them and their students.

Compatability - The degree to which PBVE is consistent with what teachers have experienced and their present value system will have an influence on whether or not they utilize it. If PBVE is perceived to be greatly inconsistent, it will be considered a threat to their personal security. Teachers can not be expected to risk personal security in adopting PBVE unless there are relative advantages offered which are great enough to compensate for the risks involved.

In many respects, PBVE is not consistent with teachers' experiences and there will be risks involved. For this reason, steps must be taken to reduce the personal risk and also stress the relative advantages of adopting PBVE. For example, teachers who decide to utilize PBVE should be treated as "special" and provided with praise for doing so. In addition, they must be provided with frequent help throughout the experience.

Complexity - The degree to which PBVE is perceived by teachers to be difficult to understand and use is a measure of its complexity. If it is perceived to be complex, teachers will feel that they will have to make a great investment in time and energy to reduce its complexity. For instance, attend special classes or workshops, read books, and the like. In fact, some may feel that

PBVE is so complex that no effort on their part would sufficiently reduce it to an understandable practice.

This being the case, PBVE must be presented to teachers as a concept that is very simple needing little personal investment to adopt. This can be accomplished by having the total system to be used fully developed before involving local teachers. They should not be required to work out the system nor develop the materials to be used in the system. In effect, their investment should be in the area of trying-out a fully developed system with sufficient help during the trial period.

Trialability - The degree to which PBVE can be tried on a limited or experimental basis is a measure of its trialability. Research points out that new practices that can be tried out on a limited basis are more likely to be adopted. Further, that teachers who try out new practices are more likely to fully adopt them.

Experience has shown that PBVE can be used on a trial basis. It is possible to make only a small segment of a total program performance-based. For instance, just that portion of the program that deals with job-seeking skills. This being the case, teachers should be encouraged to try PBVE before adopting it on a full-time basis. Further, they should be provided with appropriate help during the trial period.

Communicability - The degree to which others in a teacher's reference group are aware of his or her success (or failure) in using PBVE is a measure of its communicability. Vocational teachers would be unlikely to use PBVE if they feel that others will not become aware of their success in using the new practice. On the other hand, they would be unlikely to use it if they felt that others would learn of their failures in using the new practice.

Since there are few objects in a person's environment that are more central to him than himself, and, since his perception of himself is largely

based on how others react to his behavior, a person's self-image is at stake when becoming involved with a new educational practice. This being the case, steps must be taken to reduce teachers' chances of being unsuccessful when using PBVE. Further, teachers must be assured that the success they have will be made public and that failure will not.

Channel(C)

The communication media by which the message about PBVE passes from the source to a receiver is considered to be the channel. Teachers could receive information about PBVE through literature, lectures, workshops, or conversations with any number of persons. Each communication channel has its own special attributes but, in terms of helping teachers move toward adopting PBVE, the most important attribute is whether or not the channel facilitates either face-to-face or impersonal communication. As stated earlier, personalized information is very important as a teacher seeks to use PBVE. This being the case, those who would help teachers adopt PBVE should be conscious of the communication channel used given a particular teacher's needs.

Receiver(R)

The person who mentally processes information which comes from a source via some communication channel is considered the receiver. A teacher cannot process information he does not understand and he can refuse to process information he perceives as too difficult to understand, irrelevant, or unimportant. Even when the teacher does attend to the message, the message received may not be the message sent by the source. Each message will be filtered in light of the immediate situation, the receiver's present attitudes, and the receiver's past experiences.

Research has shown that persons with certain characteristics have a tendency to accept change more readily than others. Teachers most likely to use

PBVE will be those who are well educated, less dogmatic, have higher educational aspirations, are more inclined to take risks, have a greater ability to deal with abstractions and think rationally, and are empathetic when dealing with students.

Those who would help teachers adopt PBVE should continually strive to confirm with them the message being received. In addition, they must understand that teachers with certain characteristics will be more easily influenced to use PBVE than others.

Effects(E)

Once a teacher processes information about PBVE, an effect can be expected. Either the teacher will move closer to using it or closer to rejecting the whole idea. Neither condition, adoption or rejection, is terminal and movement toward either position will be inconsistent. In any case, adoption is felt to be a process which occurs in stages.

Awareness - The first stage in the process is reached when the teacher mentally processes information about PBVE. At this stage, information will be incomplete and the teacher should not be expected to be particularly interested in PBVE after an initial contact with the idea.

Interest - After several experiences at processing information about PBVE, a teacher might become interested in it. His personality and values as well as the norms in his school will influence him as to where he would seek additional information about the new idea. One thing is certain, unless the teacher makes an effort to seek additional information about PBVE, he has not reached the interest stage.

Those wanting to help teachers move toward using PBVE must always be concious of where a teacher is in the adoption process. Those who have demonstrated an interest in PBVE will need information which is personalized to

their needs. Those who have not become interested in PBVE need rather general information from a very credible source through an impersonal communication channel.

Evaluation - Once a teacher becomes aware of PBVE he may begin to mentally apply the idea to his own situation. For this reason, the evaluation stage in the adoption process may be considered a continual rather than discrete stage. However, it is not until the teacher becomes aware of a new idea and develops an interest in it that he really engages in determining whether or not it should be tried. During this stage in the adoption process, the teacher can be expected to become very active in seeking information upon which to make the trial decision.

Those who would help teachers must recognize when they reach this stage and provide information that could help them understand how a PBVE will operate in their own programs; "How To" information becomes most important.

Trial - Fortunately, PBVE can be tried on a limited basis which allows teachers to move toward adoption without making a total commitment to the idea. Research makes it clear that new practices that can be tried on a limited basis are more frequently adopted. Further, since the time between trial and adoption is usually very short, PBVE once tried is likely to be quickly adopted.

A word of caution is appropriate to those who would help teachers move toward adopting PBVE. It is possible to get teachers to try PBVE on a limited basis without helping them to first evaluate it and reach the trial decision themselves. However, the teacher who makes the trial decision himself will be more likely to adopt PBVE after the trial than those who engage in a trial prior to having moved through each previous stage in the adoption process. It is also important to provide teachers with help throughout the trial period; the teacher who experiences success with PBVE will probably adopt it.

Adoption - The final stage in the adoption process is reached when the teacher makes the decision that PBVE is a satisfactory practice and thus, it will be used on a full time basis. Naturally, it will take the teacher some time to assemble all needed materials and, for all practical purposes, full adoption will be a gradual expansion of the trial.

The teacher who decides to fully adopt PBVE will need help locating essential materials and may need financial support to purchase such materials. If such support and help is not provided, the teacher may be forced to reject PBVE even though adoption is preferred.

The Change Environment

As stated previously, the decision to become involved in PBVE could be made at the school level or at the teacher level. However, since PBVE requires teachers to perform in certain new ways, it is not until teachers adopt the practice that the potential of it will be realized.

Research shows that persons who teach in schools having modern norms are more likely to adopt new educational practices than teachers who work in schools having traditional norms. For this reason, those who wish to help teachers move toward adopting PBVE should first determine the norms that prevail in the schools in which teachers work.

A school having modern norms has a favorable orientation to change. School personnel can be expected to have frequent interaction with authorities outside the school and place a high value on continuing education and technological advancements in the field of education. Such schools operate on a complex division of labor with school personnel able to relate to educational roles other than their own.

Those who teach in Vocational schools having modern norms will find the support needed to move into PBVE and their efforts in this direction rewarded.

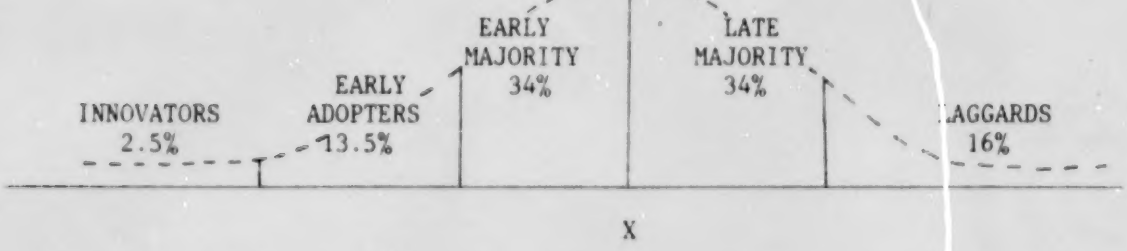
Such schools will be the first to encourage teachers to learn more about PBVE and provide them with the help they will need while moving through the adoption process.

Unfortunately, many vocational schools will be found to have very traditional norms and teachers will not find the support needed to move through the adoption process. In fact, such efforts on their part may be discouraged. When such a situation exists, there is a need to first convince school officials that PBVE has potential and that involving teachers in it will not create problems that they will be unable to handle. In such schools, until school officials accept PBVE, there is little chance that teachers will. In fact, even when school officials accept PBVE, getting teachers to do so will be difficult.

Adoption Over Time

All vocational teachers can be expected to fall along a continuum as to how long it will take them to reach the decision to adopt PBVE; some will never become adopters. This can be graphically depicted as follows:

Figure 1
Adopter Categories



There will be some vocational teachers who will be eager to become involved in PBVE. These innovators are best described as being venturesome having a personal need to get involved in educational ventures that are risky. Such vocational teachers will be the first to adopt PBVE if such is possible to do within their schools.

The vocational teachers who can be expected to follow the innovators into PBVE will be those who hold opinion leadership in the schools. These early

adopters are respected by other teachers and realize that they must continue to earn that respect from their peers if they are to maintain their opinion leadership positions. Early adopters realize that other teachers will be looking to them for advice and information about PBVE and, therefore, they must have an experience base from which to operate.

Teachers next to adopt PBVE will be those who might be considered very deliberate in their response to all new ideas. The early majority operate from the position of "not being the first to lay aside the old nor the first to try the new."

Teachers in the late majority group will be those who approach PBVE with a skeptical cautious air. They will not adopt the new practice until most others have done so and will not do so until they feel either economic or social pressure to do so.

Laggards will be those vocational teachers who tend to be suspicious of all new ideas. Such teachers live in the past and interact with those having similar orientations. When such teachers finally do come to adopt PBVE, it is possible that some new educational innovation will have emerged to superceded it.

If we consider the total number of vocational teachers to eventually adopt PBVE as such relates to time needed to reach adoption, such can be graphically depicted as follows:

Figure 2

Adoption Over Time

As can be seen, PBVE will have few teacher adopters in the beginning but, as time passes, more and more teachers will come to adopt it until, finally, even laggards can resist no longer.

The Change Agent

The research makes it clear that PBVE will be adopted more quickly if use is made of change agents; persons who act to influence change in the direction desired by the change agency. In effect, the role of a change agent is to:

Develop a Need For Change. The change agent must operate in a persuasive but consultant manner to help teachers (or school officials) recognize the need to adopt PBVE. He must help his clients see how PBVE will allow them to meet the needs of all vocational teachers and convince them that they have the ability to manage PBVE programs.

Establish A Change Relationship. Once the change agent creates the need for PBVE, he or she must develop rapport with the clients. The impression of credibility, trustworthiness, and empathy with client needs and problems, must be created by the change agent. Teachers must come to accept the change agent before they will accept the innovation being promoted; PBVE.

Diagnose The Problem. The change agent, to be successful, must be able to put himself in the teacher's shoes so that the problems they face in adopting PBVE are fully understood. Being able to see the teacher's problems through their eyes allows the change agent to properly diagnose their problems.

Create The Change Intent. After exploring the various alternatives to solving the teacher's problems as such relate to adopting PBVE, the change agent must provide the teachers with the motivation for change. Not change for change's sake, nor change for the sake of the change agent but, rather, change for the sake of better vocational education.

Translate Intent to Action. Once the intent to change has been successfully created, the change agent must help the teachers fulfill their intent. In the case of PBVE, teachers will need certain materials and help at certain times. It is up to the change agent to see that such is provided.

Stabilize Change and Prevent Discontinuance. The change agent can stabilize teachers' new behavior (PBVE) by directing reinforcing messages to them on frequent occasions. Such messages also serve to prevent teachers from discontinuing favored behaviors.

Achieve Terminal Relationship. The end goal for any change agent is to develop a self-renewing capability on the part of his clients. If successful, the change agent puts himself out of business. In this case, a school must be left to its own devices only after the change agent has effected a shift in reliance on himself to a reliance on the teachers themselves to sustain their efforts in PBVE.

Research tells us that there is a positive relationship between change agent success and the extent to which he works through opinion leaders. Such suggests that PBVE will be more quickly adopted if change agents involve local teachers having opinion leadership within local schools. Such persons will probably not be the first to adopt PBVE but, in all likelihood, once they adopt all other teachers will follow.

Optional Activity ⇨ You may wish to arrange with your Resource Person to obtain a copy of Communication of Innovations which discusses the part communication plays in change of anykind. You are especially directed to Chapter I in which an overview of the book is presented.

Activity The following items check your comprehension of the materials in the information sheet, Education and Change, pp. 29-40. Each item requires a short essay type response. Please explain fully but briefly and be sure to respond to each part of an item.

SELF-CHECK

1. The point is made that vocational teachers will need information about PBVE at various stages during the adoption process and that at times an impersonal source of information may be more appropriate than a personal source. At what stage(s) in the process would an impersonal source of information be most appropriate? Why is this so?

2. There are certain characteristics of innovations which are related to whether or not they are adopted. Briefly discuss each as it relates to PBVE.

3. Briefly describe the characteristics of teachers most likely to adopt PBVE and those of schools in which adoption would be most likely to occur.

4. Adoption is a process having different stages. Briefly describe what a vocational teacher passing through the adoption process might be doing at each stage (as such relates to PBVE).

5. In terms of time to adoption, briefly describe the adopter categories and the cumulative effect of adoption over time.

6. What functions do change agents have and what use should they make of opinion leaders?

Feedback

Compare your written responses on the Self-Check with the Model Answers given below. Your responses need not exactly duplicate the model responses; however, you should have covered the same major points.

MODEL ANSWERS

1. Research has shown that a mass media channel using a highly credible but impersonal source is most appropriate at the first stage of the adoption process; awareness. The basic reason for this is that there is no need at this stage for information to be "tailored" to the needs of individuals. More important is accurate information from a highly respected source.

2. PBVE is more likely to be adopted by teachers if they perceive it to offer them advantages (relative) in the area of economics, prestige, convenience, and/or satisfaction. It is also important that they perceive the concept to be compatible with their past experiences and present value system. PBVE is more likely to be adopted if teachers consider the practice to be easy to understand and use (not complex) and able to be tried on a limited basis prior to adoption. It is also important that teachers know that their reference group will learn of their success with PBVE but not their failures (communicability). When teachers are exposed to information about PBVE, it is important that the message deal with each characteristic; relative advantages, compatability, complexity, trialability, and communicability.

3. Research points out that those most likely to adopt PBVE will more often be well educated, less dogmatic, have higher educational aspirations, be more inclined to take risks, have a greater ability to deal with abstractions and think rationally, and be empathetic in their dealings with students. Research also shows that schools having modern norms are ideally suited to become involved in new educational ideas. Personnel in such schools have frequent interaction with authorities outside the school and the school itself places a high value of the continuing education of personnel and technological advancements in the field of education. Such schools can be expected to have a complex division of labor with school personnel able to relate with educational roles other than their own.

4. A vocational teacher could become involved in the adoption process by accident or through someone's design. For instance, the process could begin in a school inservice education day with an authority on PBVE speaking to the staff. At this stage, the teacher might process information on PBVE or not. The first stage is reached when the teacher <u>does</u> process the information. After processing information the teacher might <u>take action</u> to get more information about PBVE. When such occurs, the interest stage in the process has been reached. When the teacher starts attempting to relate all PBVE information to his/her personal situation in order to make a decision as to whether or not it's a practice worth trying, the teacher has reached the evaluation stage. If the teacher uses PBVE on a limited basis, the teacher has reached the trial stage and, after trying it, the teacher makes the decision to use it on a full-scale basis, the adoption stage has been reached.

5. There are five adopter categories ranging from first to adopt to last to adopt. A very small percentage of teachers would fall into the innovator category, the first to adopt. Following the innovators into adoption would be the early adopters, the early majority, late majority and finally the laggards. Innovators are a venturesome group willing to take risks. Those in the early adopter category usually hold opinion leadership and are highly respected school leaders. Those in the early majority group are very deliberate in their response to new ideas. They choose not to lay aside the old too quickly. The skeptics fall into the late majority category. They adopt new ideas only after economic or social pressure is placed on them. Laggards, the last to adopt, live in the past and prefer it that way.

   Adoption over time forms an "S" shaped graph when its cumulative effects are plotted. In the beginning, teachers are slow to adopt but as more and more become interested in the new idea the slope of the graph quickly rises. Finally, there are few left to adopt and the curve levels off again.

6. Change agents serve to shorten the time it takes to bring about adoption. Such persons serve to develop the need for change and, after establishing rapport with clients, they help them diagnose the barriers to change. Change agents provide change motivation and provide clients with help during the change period. They also serve to stabilize the change once adopted and provide the clients with the expertise to maintain for themselves the change once they "put themselves out of business." Research shows that change agents should work through opinion leaders since others tend to follow those with opinion leadership.

LEVEL OF PERFORMANCE: Your completed Self-Check should have covered the same major points as the model responses. If you missed some points or have questions about any additional points you made, review the material in the information sheet, Education and Change, pp. 29-40, or check with your Resource Person if necessary.

LEARNING EXPERIENCE III

Enabling Objective

After completing the required reading, demonstrate knowledge of the Pennsylvania Diffusion Plan.

Activity

You will be reading the information sheet, the Pennsylvania Diffusion Plan, pp. 50-57.

Optional Activity

You may wish to meet with your Resource Person and/or peer change agents to discuss the various aspects of the Pennsylvania Diffusion Plan.

Activity

You will be demonstrating knowledge of the Pennsylvania Diffusion Plan by completing the Self-Check, pp. 58-60.

Feedback

You will be evaluating your competency by comparing your completed Self-Check with the Model Answers, pp. 61-62.

THE PENNSYLVANIA DIFFUSION PLAN

Pennsylvania Vocational Educators have been exposed to much information about PBVE over the past several years not all of which is accurate. As a result, many of them have reached conclusions about this practice which are unjustified. For this reason, Pennsylvania must engage in a massive reeducation effort if it hopes to have local teachers adopt PBVE. The overall purpose for preparing the diffusion plan discussed below, is to help all vocational educators understand PBVE and develop the skills needed to operate such programs.

Process Stages

Awareness

Research suggests that information about PBVE (the message) should be provided by a highly credible source making use of a channel that promotes impersonal communications when the objective is to create an awareness of this new idea. Research also makes it clear that potential adopters must come to understand the relative advantages of PBVE, how it is compatible with what they currently do, how it can be tried on a limited basis, why it requires little personal risk, and what will be done to reduce its complexity. Potential adopters must also come to understand each characteristic of PBVE and how such allows vocational education to be relevant and geared to the needs of each student.

The Pennsylvania Diffusion Plan (PDP) recognizes that there are several information sources that have high credibility to Pennsylvania Vocational Educators. There are university professors, bureau personnel, and local vocational educators who could meet the credibility criterion. However, not all could send the appropriate message and not all would be willing to do so. This being the case, those willing to send the appropriate message will be prepared to do so (change agents). In addition, they will be expected to do so via mass communication channels; e.g., video presentations, large group presentations, etc.

Interest

Certain vocational educators will, after processing information about PBVE, develop an interest in it. This interest will manifest itself in information seeking activity. Research indicates that this information should come to them from a person having opinion leadership and through a personal communication channel. The information must be adjusted to the personal needs of each interested party and must be accurate.

In recognition of this, the Pennsylvania Diffusion Plan calls for the identification and preparation of local school opinion leaders as resident resource persons to local teachers having interest in PBVE.

Evaluation

Sometime after processing information about PBVE, certain vocational educators will start mentally applying what has been learned to their individual school situations. Their ability to do so will be largely dependent on the amount of information processed which itself would be directly related to the interest developed about PBVE. Most educators would have difficulty in making this mental application due to having no experience with PBVE.

In recognition of this, the Pennsylvania Diffusion Plan (PDP) calls for the establishment of an exemplary site (Reading area) that educators can visit to see PBVE in operation. In addition, the PDP calls for the establishment of a cadre of educators (change agents) having experience in PBVE both locally and, in some cases, nationally. This cadre of persons will be available to those (individuals or schools) attempting to make the trial/adoption decision.

Trial

Certain vocational educators, after evaluating PBVE, will decide to try it on a limited basis. Such individuals will need help throughout the trial period and will also need help to develop professional skills unique to PBVE.

In recognition of this, the Pennsylvania Diffusion Plan calls for the development of self-paced instructional materials to be used by vocational educators under the supervision of specially prepared resource persons (opinion leaders). In addition, the PDP calls for the availability of incentive funds to help schools (the local teachers) become involved in the trial.

Adoption

Research suggests that those vocational teachers who try PBVE on a limited basis and have success will want to adopt the practice totally. The nature of PBVE is such that certain materials will be needed by teachers before full adoption is possible. In effect, adoption will have to be gradual due to the costs involved.

In recognition of this, the Pennsylvania Diffusion Plan calls for local schools, accepting incentive money in order to become involved in the trial stage, to develop a long range plan to fully institutionalize PBVE. Such a plan must make provisions to use local funds once incentive funds are withdrawn.

Diffusion Personnel

Change Agents

The Pennsylvania Diffusion Plan recognizes the important role that change agents can play in speeding up the adoption process. Each will be expected to fulfill one or more of the following functions:

- Create a need for PBVE on the part of vocational educators.
- Establish a helping relationship with vocational educators
- Help vocational educators determine the barriers to PBVE implementation.
- Create in vocational educators the intent to overcome the barriers.
- Help vocational educators to overcome the barriers.

. Help stabilize PBVE once implemented.

. Help vocational educators develop their own maintenance of PBVE system.

Research points out that the success of change agents is directly related to:

. The extent of their efforts to fulfill functions.

. Having an orientation toward helping clients (teachers).

. Fulfilling the clients' needs, as they exist, in a systematic way.

. Having empathy - able to see things through the client's eyes.

. Working with clients through opinion leaders.

. Having credibility in the eyes of clients.

. The extent of effort put into helping clients evaluate (PBVE).

Change agents must recognize that schools have a natural tendency to maintain stable equilibrium (be traditional) and that if schools move into adoption of PBVE at too rapid a pace, disequilibrium will occur. For this reason, change agents should encourage schools to be very delibrate in moving into PBVE allowing time for the system to adjust throughout the process.

Change agents must also keep in mind that beyond the obvious benefits to be derived by moving into PBVE, there may be other effects on schools that may or may not be desirable. In recognition of this, schools must continually assess the effects that movement toward PBVE is having on the total school operation.

It is also important that change agents recognize the fact that the power in each school is in the hands of a few and that these individuals will resist any attempt to redistribute power. PBVE will bring "good" to all within the school social system and all should share in it. PBVE does not require a redistribution of power.

Finally, it must be understood that the decision to become involved in PBVE could come at the individual level (a teacher) or at the school level. Further, that the decision at a school level could be an authority decision (you will) or a collective decision (we will). Research makes it clear that PBVE will be adopted most quickly through an authority decision but that the long range effects may not be desirable. For this reason, it is recommended that change agents encourage schools to help teachers to recognize the advantages of adopting PBVE and through participatory methods reach a collective decision to move toward using PBVE. Here, working through opinion leaders becomes essential.

Opinion Leaders (Resident Resource Persons)

In every school there will be one or more persons who are well integrated within the social system and to whom most teachers will turn for advice when the concept of PBVE surfaces. Such persons are considered opinion leaders and seldom could they be considered innovative.

Change agents should identify school opinion leaders and focus attention on influencing them to move toward adopting PBVE. Although they would not be as easy to influence as would innovators, once opinion leaders become involved in PBVE, other teachers will follow. In effect, the movement of opinion leaders into PBVE demonstrates to others a local sponsorship of the practice; it becomes credible.

In terms of economy of effort, a change agent can have far more success in moving teachers toward PBVE working with a few opinion leaders than by working with a large number of teachers. However, change agents must keep in mind that if opinion leaders come to identify too strongly with them, they could be considered too innovative by others which would result in their losing opinion leadership.

Diffusion Materials

Change Agent Module

The material presented in this module was specifically prepared for Pennsylvania Vocational Educators who have expressed a favorable attitude toward PBVE and have agreed to assist in helping others move toward PBVE. Such persons are considered change agents and to fulfill this role they must have certain skills and knowledge.

The purpose of preparing a module rather than a manual for change agents is to insure that each change agent receives preparation for the role that culminates in skill application - a basic feature of Performance-Based Education. In effect, a person is not considered a competent change agent until the criteria in the Performance Assessment Form (final learning experience) have been met.

PBVE Modules

A series of modules was developed for teachers wishing to get involved in PBVE. These modules, when used in conjunction with the modules developed at The National Center at The Ohio State University, will help vocational teachers develop the skills they will need to design and operate PBVE programs.

It is essential that change agents be familiar with the content in each module and it would be desirable for them to have the skills upon which they focus. It is essential that each opinion leader have the skills addressed prior to their attempting to move into PBVE. They will need these skills to have personal success and when helping other teachers following them into PBVE.

Change agents will receive preparation in using these modules and be provided copies for use when preparing opinion leaders. In turn, opinion leaders will have copies to use when helping local teachers.

Related State Efforts

Pennsylvania has been moving toward PBVE for several years and, although efforts toward this purpose have not been fully integrated, it is important that these efforts be known by those functioning as change agents.

Performance-Based Vocational Teacher Education (PBVTE)

There has been movement toward PBVTE in Pennsylvania since the late 1960's. In 1973, the first PBVTE program in the state was pilot tested and installed at Temple University. Although other programs throughout the Commonwealth had one or more of the characteristics of PBE, it was Program VITAL at Temple that illustrated that all characteristics could be integrated so as to focus on the needs of individuals. A similar program now operates out of Indiana University of Pennsylvania, and both Penn State University and The University of Pittsburgh are working toward the same end.

Performance-Based Vocational Leadership Education

The VITAL model has been adapted for use in the preparation of vocational leadership personnel. Program LIFE has been successfully operating out of Temple University for several years.

Performance-Based Vocational Curriculum Specialist Education

The VITAL model has been adapted for use in the preparation of vocational curriculum specialists also. Once again it has been shown that it is possible to incorporate all PBE characteristics into a program and to focus the program on the needs of individuals. This Temple program remains in the pilot stage at this writing.

V-TECS Materials

Several years ago Pennsylvania recognized the value of becoming involved in an effort to update vocational curriculum. At that time, Pennsylvania be-

came a member state in the Vocational Technical Education Consortium of States (V-TECS). Through involvement in V-TECS, Pennsylvania receives catalogs listing the tasks performed by workers in the various occupations being taught. In addition, Pennsylvania receives a listing of performance objectives around which to design program.

Task Level Articulation

Pennsylvania has had two years experience in trying to effect articulation between secondary and postsecondary vocational education programs. The effort has centered on articulating across the tasks involved in related occupations. In this effort, extensive use has been made of the V-TECS materials.

Administrator Workshops

During the 1978-1979 school year an effort was made to inform all Pennsylvania administrators about the potential of PBVE. Administrators attended several workshops and many had the opportunity to visit AVTI 916 in Minnesota after which plans began to emerge to implement PBVE.

Internship at 916

In early May, 1980, seven Pennsylvania educators spent a week at AVTI 916 serving as interns in different school roles; e.g., vocational student, teacher, supervisor, curriculum specialist, personnel services, etc. During their internship experience, they identified instructional materials to be used to mount an articulated effort in PBVE in the Reading area of Pennsylvania.

Activity

The following items check your comprehension of the material in the information sheet, The Pennsylvania Diffusion Plan, pp. 50-57. Each of the four items requires a short essay-type response. Please explain fully but briefly and be sure to respond to each part of an item.

SELF-CHECK

1. As related to the stages in the adoption process, what will be done to assist Pennsylvania vocational educators moving toward full implementation of PBVE?

2. What will be the role of change agents and opinion leaders in the Pennsylvania Diffusion Plan?

3. What materials will be prepared in support of the Pennsylvania Diffusion Plan? Who will use them and to what end will they be prepared?

4. It is believed that previous related efforts have created a "climate" in Pennsylvania that should reduce the time needed to move vocational educators to full adoption of PBVE. What is the relationship between previous efforts and that of assisting vocational educators to move toward full adoption of PBVE?

Feedback

Compare your written responses on the Self-Check with the Model Answers given below. Your responses need not exactly duplicate the model responses; however, you should have made the same major points.

MODEL ANSWERS

1. The plan calls for vocational educators having high credibility and a favorable attitude toward PBVE to be prepared to make others aware of the characteristics of PBVE through impersonal communication channels. It calls for the identification of school opinion leaders and their preparation to help others in their school having an interest in PBVE. It is part of the plan that an exemplary site for PBVE be operated so that those evaluating PBVE for personal utility can observe it in operation. It calls for the development of self-paced instructional materials for those wishing to try PBVE and incentive funds to be used during the trial period. The plan calls for local planning and financial initiatives when the decision is reached to adopt PBVE.

2. The role of change agents will be that of fulfilling one or more change agent functions, e.g., creating the need for PBVE at the local level and helping vocational educators satisfy that need through overcoming local barriers to the effort. The role of opinion leaders will be to establish the credibility of PBVE on a local level. The change agent, working through opinion leaders, will help teachers move through the adoption process.

3. A module will be prepared (this one) to assist change agents develop the skills needed to help others move toward full adoption of PBVE. In addition, modules will be prepared to help opinion leaders and teachers develop the skills they will need to install and operate PBVE programs. These materials will be prepared to make certain all persons involved in the PBVE effort will receive the same information and have the same understandings as to how it must be applied.

4. It has been shown through previous efforts in Pennsylvania that individualized instruction can be used to prepare vocational teachers, leaders, and curriculum specialists. Further, that these programs can be designed to incorporate all the important characteristics of performance-based education. It has further been demonstrated that it is possible to move toward the articulation of secondary and postsecondary vocational programs and that having V-TECS catalogs improves such efforts.

   There are many vocational administrators in Pennsylvania who have observed fully operational PBVE programs at AVTI 916 and a small group of vocational educators who have actually interned at the school. In effect, the favorable characteristics of PBVE are known to decision makers and the first group of change agents partially prepared.

LEVEL OF PERFORMANCE: Your completed Self-Check should have covered the same major points as the model responses. If you missed some points or have questions about additional points you made, review the material in the information sheet, The Pennsylvania Diffusion Plan, pp. 50-57, or check with your Resource Person if necessary.

LEARNING EXPERIENCE IV

Enabling Objective

Given a case study describing how a hypothetical change agent worked with two schools to move staff toward full adoption of PBVE, critique the performance of the change agent.

Activity

You will be reading the case study, pp. 64-66, and writing a critique of the performance of the change agent described.

Feedback

You will be evaluating your competency at critiquing the change agent's performance at helping school staff toward full adoption of PBVE by comparing your completed critique with the Model Critique, pp. 67-68.

Optional Activity

You may wish to meet with your Resource Person and/or experienced change agents to discuss their experiences at helping school personnel move toward full adoption of PBVE.

Activity The following case study describes how Joe Cash, functioning as a change agent, worked through opinion leaders to move the staff of two schools through the adoption process. As you read, try to determine what Joe is doing right and what he is doing wrong. Then, prepare a written critique of Joe's performance as a change agent.

CASE STUDY

Joe Cash, a change agent in Pennsylvania's effort to move vocational educators toward full adoption of PBVE, has mixed emotions concerning his ability to function in this role. On the one hand, he was instrumental in influencing teachers at Wynn County AVTS to become involved in PBVE. In fact, almost half of the school staff was now at the PBVE trial stage and there was reason to believe the rest would follow. In contrast, teachers at Leads County AVTS seemed to have no interest in PBVE and all efforts to help them understand the importance of moving into PBVE were met with great resistance. What had he done that had resulted in such differences in the two schools?

As he remembered it, he had began his efforts with both schools about the same time. Both school directors had made it known that they had decided that their schools should get involved in PBVE and, after developing a long range implementation plan and receiving incentive funds, they had contacted Joe to provide them with assistance. Joe, in turn, made arrangements with Dr. Adams of the local university to participate in an inservice education day at each school. Dr. Adams had credibility in the area and both directors agreed to Joe's choice of a speaker. Since Joe was present at both inservice programs, he was sure that the staff of both schools received the same message through the same channel; a large group lecture-discussion presentation.

After the completion of each inservice day Joe met with the director of the school involved for the purpose of identifying a local teacher to function in the role of opinion leader for the duration of the effort. He explained to each director what would be required of the opinion leader and why it was so very important that the person identified had opinion leadership characteristics. Jerry Owen was identified to be the opinion leader for Wynn County and Billie Smith for Leads County. According to the directors, both had all the characteristics associated with being an opinion leader.

Joe contacted his new opinion leaders and had separate meetings with them in which he verified the fact that each had opinion leadership characteristics and an "open mind" on PBVE. Both, it appeared, were unhappy with their director's decision to move into PBVE without consulting with the teachers and both expressed that several teachers in their schools had some involvement in PBVE already but they had not gotten involved themselves because they usually resisted doing things that weirdos got involved with. However, since their directors wanted them to move toward PBVE, Jerry and Billie agreed to enter the modularized PBVE training program offered to them by Joe.

The transition in both Jerry and Billie was unbelieveable. After completing the training program, they couldn't wait to get involved in PBVE. With the support of their directors and with the assistance of their Craft Advisory Committee they slightly modified their laboratories, purchased materials to be used to individualize their programs, and were ready to go.

Jerry and Billie had been good choices for their roles. Both had great enthusiasm and competence as teachers. Soon their programs were operating very smoothly on the PBVE model. Jerry, throughout the whole adoption experience needed almost no help. To Jerry, PBVE was a natural extension of what he believed in. For him, having the support and skills to do what he believed in

was all that was needed. Billie, in contrast, despite her enthusiasm and teaching competence, found it difficult to make the transition. As a result, Joe and Billie spent a great deal of time together during those months in which PBVE was being implemented. Many of those meetings included the director, since he was anxious to see Billie's efforts rewarded with success. The effort was a success and Joe, Billie, and the director made this known to others on staff at a special faculty meeting called for that purpose. However, despite this successful effort by Billie and her commitment to continue with PBVE no one else on the staff developed an interest in PBVE.

Feedback

Compare your completed written critique of the case study with the Model Critique given below. Your response need not exactly duplicate the model response; however, you should have covered the same major points.

MODEL CRITIQUE

As a change agent, Joe had performed with competence. The directors of both schools had made the change decision themselves which made Joe's job a bit more difficult than if the school faculty had made the decision. None-the-less, the decision had been made, a long-range plan developed, and incentive money procured.

Joe was wise in using Dr. Adams to help the staff at both schools become aware of PBVE. Adams had credibility in the eyes of the potential adopters and used an impersonal channel of communications to develop staff awareness of PBVE. Joe was also wise to select opinion leaders to work through. It would have been preferred that the opinion leaders had an interest in PBVE before Joe started working with them. However, their openness to PBVE and their willingness to undergo training in PBVE seemed to overcome this constraint. Both became PBVE advocates after training.

The case study makes no mention of whether or not school personnel sought advice from the opinion leaders but these persons, having leadership within the social system (the school), would be expected to have frequent communication with their peers. However, the outcome differences in the two schools suggests that one opinion leader (Billie Smith) had either lost opinion leadership since getting involved in PBVE or that she did not possess opinion leadership in the first place. The fact that Billie came to identify strongly with Joe, the change agent, and her director during PBVE implementation strongly suggests

that she lost opinion leadership by her actions. She probably came to be considered an innovator (a weirdo) and, as such, school personnel would not seek advice from her. Joe should have recognized this possibility and taken steps to give Billie help in less conspicuous ways. He certainly should have avoided having the director involved in the helping situation and should have advised the director to not draw special attention to Billie's success in PBVE (Faculty meeting).

In any case, Leads County AVTS remains at the first stage in the adoption process; awareness. Joe would be well advised to locate a new opinion leader and begin again.

LEVEL OF PERFORMANCE: Your completed critique should have covered the same major points as the model response. If you missed some points or have questions about any additional points you made, review the material in the information sheets Education and Change, pp. 29-40 and/or the Pennsylvania Diffusion Plan, pp. 50-57, or check with your Resource Person if necessary.

Optional Activity ⇨ You may wish to arrange through your Resource Person to meet with him/her and/or experienced change agents to discuss their experiences at helping school personnel move toward full adoption of PBVE. At this meeting, you could:

- ask about the problems most typically faced.
- ask about the problems faced in a school in which an authority decision had been reached versus a school in which the decision had been reached by the school staff.
- discuss successful alternative strategies to solving the problems most typically faced.

LEARNING EXPERIENCE V

Terminal Objective

While working with vocational education personnel, assist them to move toward full adoption of Performance-Based Vocational Education.

Activity

Work with local school vocational personnel in Pennsylvania who seek your assistance to learn more about PBVE. This will include:

. informal discussions with vocational education leadership personnel.

. training opinion leaders in PBVE.

. assisting opinion leaders during the PBVE implementation trial period.

Note: Due to the nature of this experience, you will need a vocational school to work with.

As you complete each of the above activities, document your actions (in writing, on tape, through a log) for assessment purposes.

Feedback

Arrange in advance to have your Resource Person review your documentation and your completed module.

Your total competency will be assessed by your Resource Person, using the Change Agent Performance Assessment Form, pp. 70-71.

Based on the criteria specified in this assessment instrument, your Resource Person will determine whether you are competent in assisting vocational personnel to move toward full adoption of PBVE.

CHANGE AGENT PERFORMANCE ASSESSMENT FORM

Directions: Indicate the level of the change agent's accomplishment by placing an X in the box under the LEVEL OF PERFORMANCE heading. If, because of special circumstances, a performance component was not applicable, or impossible to execute, place an X in the N/A box.

Name _____

Date _____

Resource Person _____

	LEVEL OF PERFORMANCE					
	N/A	NONE	POOR	FAIR	GOOD	EXCELLENT
1. When discussing PBVE with vocational education leadership personnel or teachers, the change agent:						
a. Developed a rationale for adopting PBVE						
b. Described the characteristics of a PBVE program						
c. Pointed out the relative advantages of adopting PBVE						
d. Explained the compatability between what teachers now do and what they would do in PBVE.						
e. Showed how PBVE could be used on a trial basis						
f. Pointed out that the trial would involve little personal risk to teachers						
g. Explained the steps being taken in Pennsylvania to reduce the complexity of PBVE to teachers						

	LEVEL OF PERFORMANCE					
	N/A	NONE	POOR	FAIR	GOOD	EXCELLENT
2. When working with local schools wishing to institutionalize PBVE, the change agent:						
a. Worked through opinion leaders.						
b. Provided opinion leaders with training in PBVE (modules)						
c. Arranged for opinion leaders to visit an ongoing PBVE program						
d. Helped opinion leaders identify and obtain needed PBVE materials (learning guides)						
e. Provided opinion leaders with assistance throughout the trial period . . .						

LEVEL OF PERFORMANCE: All items must receive N/A, GOOD, or EXCELLENT responses. If any item receives a NONE, POOR, or FAIR response, the change agent and Resource Person should meet to determine what additional activities the change agent needs to complete in order to reach competency in the weak area(s).